



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,146	02/06/2002	Akihiko Kuriyama	70840/56923	7505

21874 7590 03/16/2004  
EDWARDS & ANGELL, LLP  
P.O. BOX 55874  
BOSTON, MA 02205

EXAMINER

PRITCHETT, JOSHUA L

ART UNIT	PAPER NUMBER
----------	--------------

2872

DATE MAILED: 03/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/068,146	Applicant(s) KURIYAMA ET AL.	
	Examiner Joshua L Pritchett	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-20 is/are allowed.
- 6) ☒ Claim(s) 1-13 and 21-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This action is in response to Amendment filed December 30, 2003. Claim 1 has been amended and claims 21-30 have been added as requested by the applicant.

#### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the optical member holding both the convex mirror and the imaging device without the use of a separate housing must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The newly added claim limitation in claim 1 requires that the invention include the optical member holding both the convex mirror and the imaging device without using a separate housing. Figs. 1B, 2B, 3B, 4B and 8B all clearly show that the imaging element (10 or 90), which is part of the imaging device is attached to a separate housing that is not attached to the optical member (4 or 94). The separate housing is not provided with a reference number therefore the examiner is unable to further describe the separate housing other than to refer the applicant to the figures.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 21, 22, 24, 28 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Driscoll (US 6,426,774).

Regarding claim 21, Driscoll discloses a convex mirror (810) for reflecting incident light representing an object, the convex mirror having a shape of solid revolution (Fig. 8A); an imaging mechanism for taking an image represented by reflected light from the convex mirror (square box); and an optical member (805) for guiding the incident light toward the convex mirror and guiding the reflected light toward the imaging mechanism (Fig. 8A). Driscoll further discloses the imaging mechanism disposed on the opposite side of the convex mirror with the optical member interposed therebetween (Fig. 8A). Driscoll further discloses the optical member contacting the convex mirror (Fig. 8A). Driscoll further discloses wherein the imaging mechanism further comprises an imaging section that has a diameter that is smaller than a diameter of the reflected light releasing face of the optical member (Fig. 8A). Fig. 8A shows that the last rectangle (imaging mechanism) has a smaller area than the reflected light releasing face of the optical member.

Regarding claim 22, Driscoll discloses the optical member having a concave portion, which is in close contact with the convex mirror so as to cover the convex mirror (Fig. 8A).

Regarding claim 24, Driscoll discloses the optical member has a plane for releasing the reflected light and the plane has a flat surface or a curved surface projecting towards the convex mirror (Fig. 8A).

Regarding claim 28, Driscoll discloses the optical member having an outer circumferential surface formed so as to cause incident light to be incident thereon in a direction

Art Unit: 2872

normal to the outer circumferential surface (Fig. 8A). The light by incident the optical member from any angle within the field of vision as defined in Figure 1.

Regarding claim 29, the outer surface at the center portion of the optical member (805) has been taken as a reflected light releasing face.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Driscoll in view of Hawryluk (US 5,745,286).

Driscoll teaches the invention as claimed including the use of the interior portion of the concave portion as the convex mirror but lacks reference to the mirror being a thin film. Hawryluk teaches the use of thin film aluminum as a thin film reflective layer used to create a mirror (col. 3 lines 18-19). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the thin film aluminum taught by Hawryluk as the convex mirror in the Driscoll invention for the purpose of extending the application of the imaging system into the ultraviolet region of the light spectrum.

Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Driscoll.

Regarding claim 26, Driscoll discloses the imaging mechanism including a lens (230) for converging the reflected light, and an imaging section (250) for taking an image represented by the reflected light converged by the lens. Driscoll does not teach the lens being in close contact with the optical member, but it has been held that it is within the ability of one ordinarily skilled in the art to make a component in close contact with another component. It would therefore also be within the skill of one of ordinary skill in the art to have the lens be in close contact with the optical member.

Regarding claim 27, Driscoll teaches a lens (240) made of SFL6. It would have been obvious to make the other lens of the Driscoll invention out of the same material. SFL6 is known to have a refractive index of 1.8 (Braat US 4,986,641). Driscoll further teaches the optical member being made of a transparent material. SiO<sub>2</sub> is a commonly known and used transparent material used in optics. The refractive index of SiO<sub>2</sub> is well known to be 1.48. It would therefore have been obvious and within the ability of one ordinarily skilled in the art to make the optical member of Driscoll have a refractive index smaller than the refractive index of the lens of Driscoll.

Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Driscoll in view of Tsunashima (US 6,169,637).

Driscoll teaches the invention as claimed but lacks the releasing face having a focal point. Tsunashima teaches a releasing face (20) having a focal point (between elements 25 and 14 in

Art Unit: 2872

Fig. 1). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the releasing face of the Driscoll invention have the light focusing ability taught by Tsunashima for the purpose of creating a more compact lens assembly because the light beams would require least physical distance to converge onto the imaging plane.

***Allowable Subject Matter***

Claims 1-13 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, first paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter:  
The prior art of record fails to teach or suggest the use of an imaging device comprising a convex mirror, an imaging mechanism and an optical member for guiding light toward the convex mirror and from the convex mirror toward the imaging mechanism, and the optical member holds both the convex mirror and the imaging mechanism without a separate housing.

Claims 14-20 are allowed.

The following is an examiner's statement of reasons for allowance: The reasons for allowance of claims 14-20 are the same as stated in the previous Office Action.



Art Unit: 2872

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Claim 25 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: It would not have been obvious to one of ordinary skill in the art at the time the invention was made to make the lens of Driscoll integral with the optical member because it would destroy the functionality of the Driscoll invention.

### ***Response to Arguments***

Applicant's arguments filed December 30, 2003 have been fully considered but they are not persuasive.

On page 10 of Amendment, applicant argues that the Driscoll reference lacks the claim limitation of the optical member holding both the convex mirror and the imaging mechanism without the use of a separate housing. This newly added limitation constitutes new matter as discussed above, therefore the claim is not allowable.

On page 10 of Amendment, applicant argues that Driscoll lacks reference to the reflected light releasing face of the optical member having a diameter greater than the diameter of the imaging section. Fig. 8A of Driscoll shows optical member (805) having a reflected light releasing face that is larger in diameter than the imaging section. Reflected light can inherently exit the optical member (805) at any point of its surface based on the incident angle of the incoming light, therefore because the diameter of the optical member (805) is greater than the imaging section the reflected light releasing face of the optical member (805) is greater than the diameter of the imaging section.

On pages 10-11 of Amendment, applicant argues that because claim 1 is allowable the claims dependent from claim 1 are also allowable. Claim 1 is not allowable based on the new matter rejection from above and therefore the argument is moot.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L Pritchett whose telephone number is 571-272-2318. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2872

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLP  
*JLP*

  
**DREW A. DUNN**  
**SUPERVISORY PATENT EXAMINER**